REMARKS

Applicants have carefully considered the Office Action dated April 22, 2004 regarding the above-identified application, and the amendments above together with the remarks that follow are presented in a bona fide effort to respond thereto and address all issues raised in that Action. The independent claims have been amended to more clearly point out patentable distinctions over the applied patent and thereby overcome the art rejection. Claim 55 has been amended to conform to the amended language of independent claim 52 Care has been taken to avoid entry of new matter. Prompt favorable reconsideration of this amended application is requested.

The reference to the parent application has been replaced. The new version correctly lists the filing date of the immediate parent application and identifies the patent now issued from the parent application.

The only issue raised in the Action was an art rejection. The previous versions of claims 51-55 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,512,747 to Maeda. The independent claims have been amended to distinguish over Maeda, and Applicants submit that the new versions of claims 51-55 are novel and patentable over Maeda.

The method of claim 50 involves calculating a focus evaluation value of each pixel on each of the two dimensional images, which have been formed at different focus heights. A pixel having focus evaluation value larger than at least one other pixel is selected, from among pixels at the same respective coordinates of the two dimensional images. The method two dimensionally synthesizes pixels selected in this way, for each of a plurality of different image points, to form a composite image.

Maeda discloses an auto focusing technique for a scanning electron microscope. An auto focusing mechanism calculates a focus evaluation value, using an electron signal or picture signal

generated from a specimen when the specimen is scanned by an electron beam focused by an objective lens. The mechanism controls an exciting current of the objective lens according to the focus evaluation value. The scanning electron microscope also includes a focus correction value register and a focus correction mechanism which corrects the focused position determined by the auto focusing mechanism by as much as the registered correction value. It is not seen where Maeda suggests synthesizing a composite image from pixels selected from two different images. It is also not readily apparent where or how Maeda teaches selection of a pixel for given coordinates from those at the same coordinates in a plurality of different images.

Maeda therefore does not anticipate amended claim 50. It is believed that the selection and synthesizing steps would not have been obvious in view of Maeda. Claim 50 therefore should be patentable over the art.

Claim 51 specifies a charged particle beam apparatus. In the claimed apparatus, the processor memorizes two dimensional images taken at different focus heights. For each of a plurality of image points, the processor selects a pixel having a larger focus evaluation value from among pixels at the same coordinates of the two dimensional images. The processor forms the image from selected pixels. It is not seen where Maeda suggest forming multiple images and selecting pixels from those images for different image points, to form the final image. These claim features are neither disclosed in nor obvious in view of Maeda. Claim 51 therefore patentably distinguishes over the art.

Independent claim 50 is another apparatus claim, but this claim points out a different distinguishing feature. In photography, "depth of field" refers to a range of image focus, extending between the nearest distance and farthest distance from the camera at which an object will appear sharply focused in a photograph. The present specification uses "focal depth" to express a similar

concept, for the scanning electron microscope images. Each scanned image has a focal depth. As described in this application, the "focal depth" is a range of focus for a specific set of imaging conditions (see e.g. the paragraph bridging pages 68-70 and the discussion running from line 7 of page 71 to last line of page 72 in this application).

Disclosed embodiments effectively extend the focal depth by forming a composite image from pixels appropriately selected from individual images taken at different focal distances (and having individual, limited focal depths). However, to optimize performance for such composite imaging, the application teaches that the focus shift between images may be carefully controlled. In at least one example, the maximum extension of focal depth for the composite image is achieved with a minimum number of images, by setting the focus shift amount to a value the same as or a little smaller value than the individual focal depth of each respective image (see e.g. last four lines of page 72 and first four lines of page 73 of this application).

Claim 52 specifies a focus shift related to calculated focal depth. In this claim, the controller adjusts a charged particle beam to a focus and computes a focal depth for an image if taken at that focus. The controller also shifts focus of the charged particle beam, by an amount equal to or less than the computed focal depth. It is respectfully submitted that Maeda does not teach computing such a focal depth and shifting beam focus by an amount equal to or less than the computed focal depth. These claim features are neither disclosed in nor obvious in view of Maeda. Claim 52 and dependent claims 53-55 therefore patentably distinguish over the art.

Claims 50-55 remain active in this application, and all of those claims should now be patentable over the art applied in the Action. It is therefore submitted that all of the claims are in condition for allowance. Accordingly, this case should now be ready to pass to issue; and Applicants respectfully request a prompt favorable reconsideration of this matter.

It is believed that this response addresses all issues raised in the April 22, 2004 Office Action. However, if any further issue should arise that may be addressed in an interview or an Examiner's amendment, it is requested that the Examiner telephone Applicants' representative at the number shown below.

To the extent necessary, if any, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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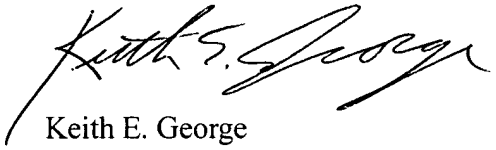

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Date: October 13, 2004